

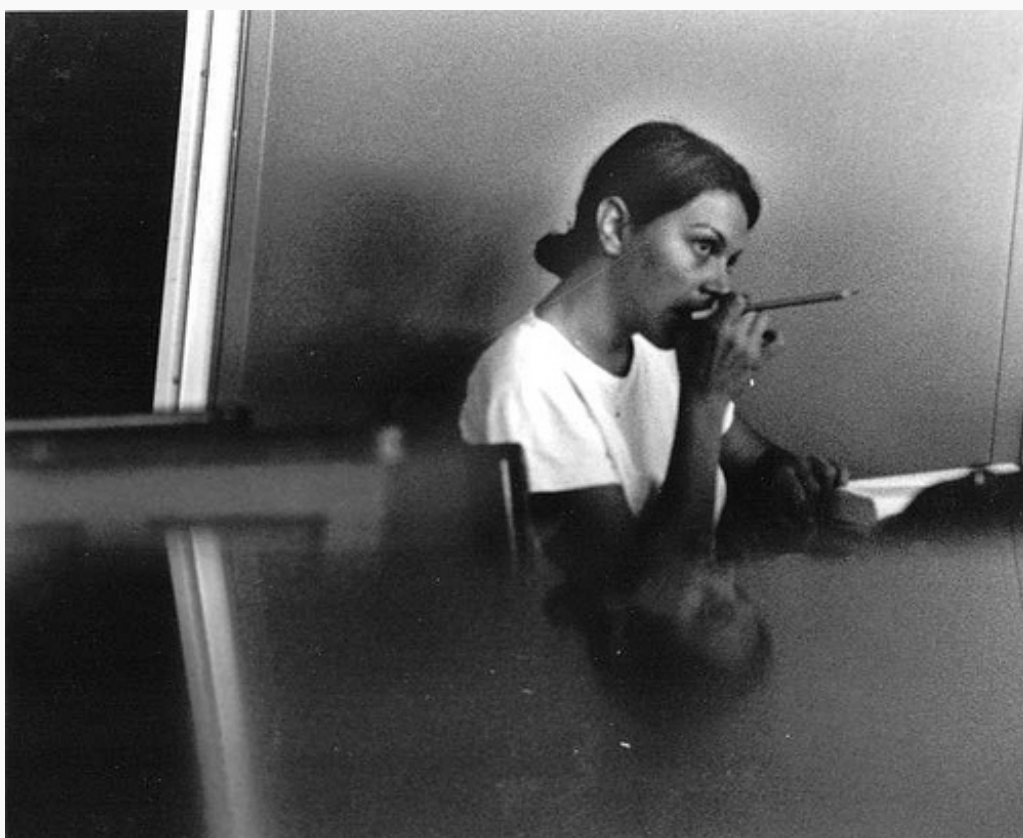
# What's Your Best Guess? Predicting Answers Leads to Deeper Learning

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Predictions pique our interest. Once we wager that our favorite sports team will win, we want to know the final score. Once we guess the identity of the murderer in a mystery novel, we keep reading to find out if we were right.

The same holds true, it turns out, in the learning of mathematics. [A new study](#) published by two Michigan psychologists reports that middle-school students asked to anticipate how linear and exponential factors work—before this information was taught—became more curious about the content of the lessons they then proceeded to learn. Even more importantly, the act of venturing predictions prompted them to understand the material more deeply as they engaged in reasoning and sense-making about math instead of mere memorization.



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To test their theory that making predictions would facilitate learning, Lisa Anne Kasmer of Grand Valley State University and Ok-Kyeong Kim of Western Michigan University designed a lesson plan in which the teacher started off the class with a series of prediction questions. Students were asked to imagine, for example, that a boy named Alejandro was cutting a paper ballot in half, then in half again, and so on. “If Alejandro makes ten cuts, can you predict how many ballots Alejandro might have?” the teacher asked. “What is your reasoning?”

The pupils wrote down a prediction, along with explanations supporting their guess, and then discussed their responses with their classmates. After telling the students that it was their reasoning that was important, not the correctness of their predictions, the teacher went on to teach them about linear and exponential factors. Only then did the students revisit their initial predictions to find out if they'd guessed right.

Making predictions, Kasmer and Kim explain, helps prime the learning process in several ways. In the act of venturing a guess, we discover what we know and don't yet know about the subject. We activate our prior knowledge on the topic, readying ourselves to make connections to new knowledge. We create a hypothesis that can then be tested, generating curiosity and motivation to find out the answer. Most of all, making predictions leads us to think deeply, to “explore the ‘why’ that underlies challenging problems,” in Kasmer and Kim's words. Students who view mathematics as only memorizing facts and procedures, they note, are often unsure of when or how to apply what they have learned. Making predictions requires students to actively grapple with new concepts instead of passively receiving them.

The authors suggest that teachers—and parents and learners themselves—make generating predictions “a habit of mind” that they engage in each time they approach a new learning situation. My prediction: doing so will make learning more effective, not to mention more fun.

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